DHSS Policy Brief #1
January 2006

Overweight Among School-Age Youth; Challenges and Opportunities for Missouri Schools

Acknowledgement

The Missouri Department of Health and Senior Services (DHSS), in partnership with the Obesity Prevention Center of the St. Louis University School of Public Health, prepared this policy brief to call attention to the challenges facing schools today that are created by the competing demands of increasing student academic achievement and the need to address student health issues, including an increasingly serious problem—overweight. This brief presents the challenges and offers policy recommendations for addressing the problem of overweight among school-age children that also supports the academic mission of schools. The recommendations provide sound policy options to debate, modify if needed, and adopt to support the education and health of school-age youth in mutually beneficial ways. A special thanks is extended to Chris Fleming of St. Louis University for his work in preparing this paper.

Introduction

The obesity epidemic in America is not a passing trend – 65 percent of adults age 20 years and older in the United States are either overweight or obese, and the percentage of young people who are overweight has more than tripled since 1980.[1] Overweight in children is defined similarly to obesity in adults. The increase in overweight among young children is alarming and will have serious social and economic consequences if not addressed. Schools are often called upon to help address health problems impacting students. The rise in overweight among children and adolescents is no exception. Schools are also faced with increased pressure to improve student academic performance to meet and exceed state and national standards. Such pressure creates competition for instructional time among subjects for which academic testing is conducted and those that may not be tested, such as health education and physical education. Additionally, shrinking resources may create barriers to implementing policies, programs and services such as quality physical education and health education instruction, adequate recess time, after school physical activity programs, and healthy meals and snacks, all of which can improve and support the health of students. This paper offers recommendations for actions that can be taken to support Missouri's schools in providing increased opportunities for student access to physical activity and healthy nutritional choices.

Specifically, this paper will:

- Discuss the relationship between childhood physical activity and dietary intake to childhood overweight;
- Highlight the pressures on schools to meet academic standards;
- Detail existing evidence demonstrating positive links between increased physical activity and improved nutrition with health and academic achievement;
- Present examples that schools and states throughout the nation have taken to increase physical activity and improve nutritional choices within schools; and
- Offer recommendations for state-level policy action in Missouri.

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Prevalence, Consequences and Contributing Factors of Childhood Overweight

Traditional measures for overweight and obesity utilize the Body Mass Index (BMI) scale, which is a measurement of the proportion of an individual's weight relative to that individual's height. Because children's and teens' body fat changes as they grow, BMI is used to assess underweight, at risk for overweight, and overweight.[2] Known as BMI-for-age, it is a gender-specific measurement basing overweight or at risk for overweight status on percentiles – children and teens with a BMI that falls between the 85th and 95th percentile for a gender and age specific population are considered at risk for overweight, while having a BMI in the 95th percentile or higher places children and teens in the overweight category.

These distinctions are important, because evidence has shown that the children who are overweight or at risk for overweight have a much better chance of being obese as an adult than children who are of normal weight. For instance, one study found that for children aged 10 to 15 years, 75 percent of the children who were at risk for overweight were obese adults at age 25, while 83 percent of the overweight children in this age group were obese by the age of 25.[3]

Increases in the prevalence of overweight in both children and adult populations are having and will continue to have enormous economic consequences in terms of health care spending on obesity-related conditions. A 2002 study of multiyear National Hospital Discharge Survey data revealed that for children 6-17 years old, discharges of diabetes nearly doubled, obesity and gallbladder diseases tripled, and sleep apnea increased five-fold. Annual hospital costs associated with obesity in these children increased three times to $127 million during 1997-1999 (in 2001 dollars).[4] It has been estimated that direct medical costs attributable to adult overweight and obesity have reached $75 billion per year (in 2003 inflation-adjusted dollars).[5] In Missouri in 1998, health care costs attributed to adult obesity alone totaled $1.6 billion (in 2003 dollars).[5]

The prevalence of overweight children has tripled since 1980, and while obesity has genetic determinants, the genetic composition of the population does not change rapidly, meaning that the large increase in childhood overweight is due to non-genetic factors.[6] It has become clear that dietary intake[7] and physical activity[8] patterns developed among children and adolescents play an integral role in the increase of overweight children and adolescents. Children and adolescents are eating too much of the wrong kinds of foods and are not getting enough physical activity. Providing environments that encourage healthy food consumption and physical activity is crucial in addressing the problem of childhood overweight.[8-9]

In Missouri, the evidence confirms that there is a rising percentage of children who are overweight and at risk for overweight. In 1999, the Missouri Department of Health and Senior Services (DHSS) found that 18.6 percent of Missouri children aged 12-19 years who were screened were overweight, compared to the national average of 14 percent for the same age group.[9] The percent of overweight appears to be increasing among students aged 5-11, as 19.4 percent of Missouri students in the population screened were overweight in 1999, while in the 2000-2001 school year, 21.5 percent of the population was overweight.[9]

The problems related to childhood overweight are not simply cosmetic; there are profound health problems associated with excess weight. The American Heart Association (AHA) stresses the importance of increasing childhood physical activity and decreasing childhood obesity as two important factors in the primary prevention of atherosclerotic cardiovascular

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disease ("clogged" arteries).[10] Post mortem studies following unexpected deaths have marked the presence of atherosclerosis in children and young adults – these studies have shown a positive and significant correlation with established risk factors (low-density lipoprotein cholesterol, triglycerides, systolic and diastolic blood pressure, BMI, and presence of cigarette smoking) for cardiovascular disease.[10]

Much scientific evidence has shown that many of the risk factors for cardiovascular disease are exacerbated by physical inactivity. Indeed, the AHA noted that, based on evidence from the well-documented and extensive Bogalusa Heart study, as the number of cardiovascular risk factors increases, so does the pathological evidence of atherosclerosis in the aorta and coronary arteries beginning in early childhood.[10-11]

In addition to evidence of early atherosclerosis among children and young adults, clinic-based reports and regional studies are consistently finding increases in the prevalence rates of children with type 2 diabetes mellitus.[12] These rates have increased as much as 10-fold over the past two decades, and there is "broad consensus" that the increasing prevalence of overweight in children has played a major role in the recent increase in pediatric type 2 diabetes.[12] Virtually all published studies have found that mean BMI among children with type 2 diabetes mellitus is above the 95th percentile for age.[12]

Challenges and Opportunities for Physical Activity in Schools

School Physical Education Programs

Given the importance of physical activity among children and adolescents in preventing and controlling overweight, ensuring adequate amounts of quality physical education is a priority. However, the presence of physical education in our nation's schools is currently inadequate. Nationwide, just 8 percent of elementary schools, only 6.4 percent of middle/junior high schools, and a mere 5.8 percent of senior high schools provide daily physical education or its equivalent for the entire school year for students in all grades in the school.[13] Furthermore, in 2003, according to the CDC only 39.2 percent of high school students nationwide were physically active 20 or more minutes during physical education class on three to five days per week, a possible indication of the quality of instruction provided.[14]

Participation rates relative to physical education classes are also quite low among Missouri schoolchildren. Based on data from the 2003 Youth Risk Behavior Survey (YRBS) results, 66.8 percent of Missouri high school students did not attend daily physical education class, while 49.4 percent reported not being enrolled in a physical education class at all during the school year.[15] Indeed, 72 percent of Missouri high school students reported participating in insufficient moderate physical activity, both inside and outside of school.[16] More recently, according to the 2005 Youth Tobacco Survey conducted by Missouri DHSS, only 27.4 percent of middle school students and 17.5 percent of high school students reported attending a physical education class daily.[16]

Barriers to Opportunities for Physical Activity in Schools

Providing adequate opportunities for physical activity during the school day through physical education classes and recess time is often difficult because of competition for instructional time needed to meet the demands created by state and national academic standards. The federal No Child Left Behind (NCLB) law holds schools accountable for poor standardized test scores among students. NCLB has added four additional reading tests for grades 3-8, four additional math tests for grades 3-8, and three new science tests for grade spans 3-5, 6-9, and 10-12. The increased number of tests coupled with the monetary and other penalties imposed for not meeting certain test score standards has prompted many school districts and local education agencies to divert resources away from subject areas such as physical education instruction to the core, "tested" courses.[17] In an effort to conserve resources and boost time spent on

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stanstandardized test preparation, school administrators may sacrifice time devoted to physical education and reduce scheduled recess time. Existing evidence, however, demonstrates that schools that offer intense physical activity programs have seen positive effects on academic performance and achievement, even when the added physical education time takes away from class time for academics.[18]

Recess periods, which are regularly scheduled periods within the elementary school day for unstructured physical activity and play, provide another opportunity for daily physical activity as well as social and cognitive benefits. School districts concerned about the need for increased instructional time, and in some cases safety concerns for children, have eliminated or reduced recess time. Studies have shown that 1) students who do not participate in recess become fidgety and less able to concentrate on tasks and 2) the longer children sit in classrooms without a recess break, the less attentive they become.[19] The National Association of Elementary School Principals endorsed recess because of its important contribution to children's physical and social development.

Physical Activity and Academic Achievement

A recent systematic literature review of over 850 articles and papers illustrated many examples of positive effects of physical activity on academic achievement.[20] Several studies found that allocating more curricular time to programs of physical activity does not negatively affect academic achievement, even when time allocated to other subjects is reduced.[20] Additionally, other studies found that the addition of physical education to the curriculum results in positive gains in academic performance.[20]

Two studies conducted by the California Department of Education also found positive effects of physical activity/fitness on academic achievement. The first study matched the scores of approximately 954,000 fifth, seventh, and ninth graders on the 2001 Stanford Achievement Test (which tests on reading and mathematics) with the results of the state-mandated physical fitness test, known as the *Fitnessgram*, also given in 2001.[21] Important findings are listed below:

- Higher academic achievement was associated with higher levels of fitness at each of the three grade levels measured.[21]
- Fifth graders who had achieved the maximum number of fitness standards scored, on average, in the 71st percentile on the mathematics test, compared to an average score in the 36th percentile for those fifth graders who had only met one fitness standard.[21]
- Students who met minimum fitness levels in three or more physical fitness areas showed the greatest gains in academic achievement at all three grade levels.[21]

In April of 2005, the California Department of Education released another important study – this study again displayed a link between physical fitness and academic achievement.[22] This study also used the *Fitnessgram* results and matched those results with the scores of fifth, seventh, and ninth graders on the California Standards Tests (CST), which measure academic achievement in English-language arts, mathematics, history-social science, and science.[22] The findings displayed a strong positive relationship between physical fitness and academic achievement. Of the 1,036,386 students tested, those achieving all fitness standards scored, on average, 352 on the English-language arts tests, while those students who achieved no fitness standards had an average score of 305.[22] As the overall physical fitness test scores improved, the mean scale scores on the CST also improved.[22]

There is corroborating evidence from an analysis of 44 studies testing relationships between cognition and physical activity which found that, "at the very least it can be said that time spent participating in physical activity will not hurt cognitive performance or academic achievement."[23] Based on their findings, the authors of the analysis suggest that physical activity may even be related to improved cognitive performance and academic achievement, and they propose that the results of their analysis "provides evidence for the argument that physical activity should be a part of the school day for both its physical health and cognitive benefits."[23]

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Challenges and Opportunities for Healthy Foods in Schools

A Healthy School Nutritional Environment

Most schools have recognized the role school meals play in providing adequate nutrition during the school day. The federal government, specifically USDA, has been subsidizing this component since 1946 for National School Lunch and 1975 for National School Breakfast. Availability of healthy food options and consistent, accurate nutritional information with frequent opportunities to use that information is the foundation of a healthy school nutritional environment.[24] Messages about healthy eating and physical activity should be consistent, accurate, clear and applicable wherever students go in a school—classrooms, dining room, gym, etc.[24] Wherever students go, they should be able to choose healthy food options—whether in the lunchroom, the classroom, at parties or at sports events.[24] Another component of the healthy school nutritional environment is adults modeling healthy eating and physical activity behaviors in the school setting.

Barriers to Healthy food Choices in Schools

Children face many eating opportunities while in school. Some opportunities support healthy choices while many others undermine a healthy diet. In Missouri, over 500 public and private school districts participate in the National School Breakfast Program and over 700 public and private districts participate in the National School Lunch Program. These programs address problems of hunger, food insecurity and poor nutrition by providing nutritious meals that meet specific dietary guidelines for children. Yet a recent report from the U.S. Government Accountability Office (GAO) indicates that nationally, nearly 9 out of 10 schools sell competitive foods- foods that compete with the sale of federally reimbursable school meals.[25] Foods sold in vending machines, school stores, snack bars, for fundraisers and as a la carte in the cafeteria are all considered competitive foods. The nutritional value of competitive foods is largely unregulated and typically poor - consisting of high sugar, fat and calorie foods, such as candy and baked goods.[26] In addition to the school meals and competitive foods, children also frequently receive food at school parties and in the classroom as rewards or incentives for desired behaviors. Again, these foods are often high in sugar, fat and calories and low in nutrients.

The overwhelming presence of less nutritious foods in schools can significantly compromise the nutritional health of children. First, it sends children conflicting messages about acceptable dietary behaviors. In the classroom children learn about the importance of practicing moderation and consuming adequate quantities of fruits, vegetables, low-fat milk and whole grains. Yet the opportunities for children to select these healthy foods are limited to reimbursable meals while the opportunities to select less nutritious foods abound. In some schools healthy eating messages are further compromised by noncash goods and services, such as scoreboards, cups and coolers provided through exclusive beverage contracts. These items typical bear the logo and promotional message of less nutritious beverages and their presence serves as a silent endorsement of these products by the school.[25] Second, research indicates that the total food environment influences students' food choices. The simple availability of healthful foods such as fruits and vegetables may not be sufficient to prompt the selection of these items when other food items of high-palatability (often high fat and sugar items) are easily accessible, especially those that are heavily marketed to youth.[26]

The primary barrier to improving healthy choices in schools is financial concerns, but several other barriers also exist. The sale of competitive foods generates substantial revenues for schools to support the food service operations and other school groups such as athletic teams. According to a 2005 GAO report the potential loss of revenue to support a variety of projects at the school level is a key reason school officials oppose changes to competitive foods practices.

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School officials have also cited a lack of clear standards defining healthy and less nutritious foods, an uncertainty of the full extent of competitive foods sales in their schools and the need to continually monitor implementation of competitive foods policies as obstacles to change. In addition, finding healthy, affordable and available foods that appeal to the students has also been identified as a barrier.

Nutrition and Academic Achievement

Malnutrition can be found in many different forms. In the United States the most common forms of malnutrition are linked to inadequate intake of individual nutrients, as with iron deficiency anemia and dietary excess, as is the case with overweight and obesity. Both of these forms of malnutrition are associated with compromised academic achievement. Conversely, healthy nutrition behaviors have been found to have a positive impact on academic success.

The importance of various nutrients, breakfast and food sufficiency (the availability of nutritionally adequate and safe foods) to cognition or academic performance has been shown in a number of studies. The nutrients studied since 1980 because they have been consumed at lower than recommended levels include iron, zinc and iodine. While deficiency of zinc and iodine is not a concern in the United States, iron deficiency is still a problem. Children with iron deficiency anemia who do not receive treatment can experience impaired cognitive functioning and memory as well as decreased school performance.[27] Although the evidence that food insufficiency negatively affects cognition or academic achievement is limited (three studies in the United States), the results of these studies indicate an association between food insufficiency and poorer cognitive functioning, decreased school attendance or diminished academic achievement.[28] These results point to the need to ascertain the presence of food insufficiency among schoolchildren and to address that need, if found.

While nutritional intake is important, the weight status of children also affects cognition or academic achievement. In a review of 10 articles published in peer review journals related to children and school performance over the last 10 years, Tares et al found that there were consistent findings that school performance was not as high among children who are at risk of overweight or overweight.[29] Overweight children were more likely to have lower IQs, lower test scores, and miss more days of school. One study found that overweight girls were more likely to be held back a grade and consider themselves poor students; overweight boys were more likely to consider themselves poor students and expect to quit school.

The Institute of Medicine states that children obtain about one-third of their total daily energy requirement from school lunch and "should expend about 50 percent of their daily energy expenditure while at school."[26] Further, students who eat breakfast at school possibly consume as much as "58 percent of their total daily energy requirement at school."[23] These percentages speak to the importance schools must attach to their student meal programs, especially in the context of the epidemic increase in childhood overweight. Implementing sound school nutrition policies should be a priority not only for the health implications, but also due to the presence of positive links between adequate nutrition and cognition and academic achievement among children (as detailed in a collection of resources put together by the Food and Nutrition Information Center at the United States Department of Agriculture's National Agricultural Library).[30]

Sufficient nutrition has also been shown to have positive effects on not only academic achievement but also behavioral functioning. Brandeis University's Center on Hunger and Poverty has pointed to research that shows the benefits for the cognitive development of children resulting from initiatives such as the federal School Breakfast Program.[27] Such benefits include:

- Higher performance on standardized tests;
- Better school attendance;
- Lowered incidence of anemia;
- Reduced need for costly special education.[27]

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A three-year study of a universal breakfast pilot program in Minnesota elementary schools yielded positive results relative to student behavior and academic performance. Breakfast was integrated into the educational schedule of all students, and parents, teachers, and school administrators reported many positive results:

- Increased student attention - teachers reported that students are more energetic at the start of the day, and complaints about mid-morning hunger "have noticeably decreased".[31]
- Improved student behavior - administrators acknowledged 40-50 percent declines in discipline referrals.[31]
- Reduced nurse visits – school nurses reported a significant decline in morning visits to their offices due to minor headaches and stomachaches.[31]
- Improved test scores – there was a general increase in composite math and reading percentile scores when comparing the test scores of third graders before the universal school breakfast program with their scores as sixth graders after experiencing the program for three years.[31]

The placement of and amount of time devoted to school lunches have also been shown to have positive effects on student behavior, consumption of nutrients, and willingness to learn. Pilot studies at seven schools in Washington State and Montana placed recess before lunch and produced promising results.[32, 33] The Washington study found that consumption of vitamins and minerals, especially calcium intake, was "significantly higher in the schools with recess before lunch and represented a 35 percent increase in intake."[32] The Montana study also found that milk consumption increased among students eating lunch after recess, and administrators and teachers commented that, among students eating lunch after recess, behavior during lunch, at recess, and in the classroom noticeably improved.[33] Both studies found significant decreases in food waste among students eating lunch after recess, and the Washington study found that the intake of macronutrients and amounts of calcium and vitamin A consumed were significantly greater among students given 30 minutes versus 20 minutes to eat lunch.[32, 33]

Responses to Childhood Overweight Across the Nation

Federal Legislative Requirement for Local Wellness Policies

In 2004, Congress passed Public Law 108-265 requiring each school district participating in the National School Lunch and/or National School Breakfast Program to establish a local wellness policy by the beginning of the 2006-2007 school year. The goals of the law are to promote sound nutrition and establish a healthy school environment in order to enhance student health and reduce childhood overweight. The law requires districts to set goals for nutrition education, physical activity and other school based activities designed to promote student wellness. In addition, schools must include in their policy nutrition guidelines for all foods available on the school campus during the school day. The development of the local policy must be completed by a broad group of individuals, and a strategy for monitoring the plan must be implemented.

State Legislative Actions

In 2005, there has been a substantial increase in the number of bills introduced addressing the availability of physical and health education classes in addition to nutritional standards and access issues in schools. Forty states introduced approximately 200 bills providing some form of nutritional guidance, while 48 bills advocating health education were introduced in 24 states.[34] Regarding physical education, 43 states have introduced measures that would implement or enhance physical education or activity standards, while 18 of these states have adopted such legislation.[34] Notable bills include:

- South Carolina H.B. 3499 – mandates 150 minutes per week of physical education and physical activity for students in kindergarten through grade 5 beginning in the 2006-07 academic year.
- Kentucky S.B. 172 – allows for 150 minutes per week to be part of the instructional day at schools with grades K to 5.

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• Washington S.B. 5186 – charges the superintendent of public instruction to promote the adoption of curricula and policies that provide quality, daily physical education for all students.

Other states have passed legislation, implemented agency-driven plans, or used a combination of such actions in bringing about important policy changes affecting schools. To view noteworthy actions taking place in several states, please see Appendix 1.1. Additionally, for a more thorough discussion on state activities relative to nutritional choices in schools, please see Policy Brief #2 issued by DHSS entitled "Overweight Among School-Age Youth; Healthy Foods and Beverages in Schools."

Missouri's Response to Childhood Overweight

New High School Graduation Requirement for Health Education

The Missouri Board of Education increased high school graduation requirements in October 2005 that will become effective in 2010. One of the changes made is to require students to earn one-half unit in health education to graduate in addition to one unit of credit, or one year, of physical education credit that continues to be required. The total number of credits to be earned for graduation increased from 22 to 24. Four units of communication arts and three each of math, science and social studies are required.

Local Wellness Policies

Professionals representing several Missouri organizations were convened to prepare a coordinated approach for assisting schools in meeting the Federal Local Wellness Policy requirements. The Missouri Department of Elementary and Secondary Education, the Missouri Department of Health and Senior Services, the Missouri School Boards' Association, University of Missouri Extension, the American Heart Association, and the Dairy Council collaborated to develop a model Missouri Wellness Policy and Procedures. The state team provided the policies, procedures, and other resources for a cadre of individuals from throughout the state during a workshop in fall 2005. The purpose of the workshop was to prepare the cadre of individuals to help schools in their communities with developing local wellness policies. In addition, members of the state team conducted numerous presentations on the Missouri Model Local Wellness Policy at several statewide conferences including the Missouri School Boards' Association annual meeting and the Coordinated School Health Conference.

Preventing Obesity and Other Chronic Diseases – Missouri's Nutrition and Physical Activity Plan

During the last two years over 40 partner organizations and 300 individuals helped craft Missouri's plan to decrease overweight and obesity among children, youth and adults. The state plan includes strategies and actions to improve access to healthy food choices and opportunities for physical activity in schools and child care facilities, workplaces, homes and communities. Strategies are also outlined for developing and delivering consistent messages about how to safely and effectively improve nutrition and physical activity practices, to enhance the ability of health care providers and systems to prevent, treat and manage patients' weight, and increase state-level policies that promote physical activity and healthy nutritional habits.

This paper is a first step toward addressing state-level policy that will support school-age youth in adopting healthy physical activity and nutritional habits to prevent and control overweight.

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Recommendations for Policy Action in Missouri

- **INCREASE SCHOOL PHYSICAL EDUCATION REQUIREMENTS AS FOLLOWS:**
  - Elementary schools shall provide a minimum of 30 minutes of physical education per school day,
  - Middle/junior high schools shall provide 45 minutes of physical education per school day, and
  - High school students shall earn 2 credits of physical education for graduation.

- **SUPPORT OPPORTUNITIES FOR PHYSICAL ACTIVITY IN ADDITION TO THAT PROVIDED IN THE PHYSICAL EDUCATION PROGRAM.**
  Specifically, it is recommended that:
  - Missouri elementary schools be required to provide a minimum of one supervised recess period for elementary students each day.
  - Missouri schools increase before and after school physical activity programs and that increased funds be made available to support such programs.

- **REQUIRE NUTRITION BE TAUGHT AS PART OF THE SCHOOL HEALTH EDUCATION CURRICULUM.**
  Specifically, it is recommended that nutrition be included in the required content of the elementary, middle and high school health education requirements.

- **REQUIRE ASSESSMENT OF STUDENTS' PERFORMANCE IN PHYSICAL FITNESS AND HEALTH EDUCATION.**
  Specifically, it is recommended that Missouri schools conduct routine testing of children in health education and physical fitness using The Missouri Assessment Program (MAP).

- **ESTABLISH STATE REQUIREMENTS FOR HEALTHY FOOD CHOICES IN MISSOURI SCHOOLS.**
  Specifically, it is recommended that:
  - Missouri require schools to establish plans for exceeding current minimum standards for foods made available in schools by following recommendations established in the "Missouri Eat Smart" nutrition standards.
  - Avenues for providing more funding to schools that meet higher standards be explored.

APPENDIX 1.1 - HIGHLIGHTED STATE PROGRAMS AND LEGISLATION

STATE	LEGISLATION/PROGRAMS	ACTIONS
MAINE[8]	➢ Healthy Maine Partnerships, funded largely by the tobacco Master Settlement Agreement	• Bans on sale of soda and candy during school day in all schools • Opening of school facilities for after-school physical activity • Leveraging of grants and local funds to support physical education
ARKANSAS	➢ Enactment of 2003 House Bill 1503 - Created the Child Health Advisory Committee ➢ Enactment of 2005 Senate Bill 965	• Model/pilot programs funded in part by Master Settlement Agreement • Food and beverage machine access prohibited for elementary students • Schools require BMI reporting on student report cards • National School Lunch Program districts to provide information and recommendations concerning food sold in schools
MICHIGAN[28]	➢ Board of Education recommendations ➢ School utilization of CDC's *School Health Index*	• Board of Education policy recommending 150 minutes per week of physical education for elementary school students • Board of Education policy recommending 225 minutes per week for middle and high school students • School establishment of daily salad bars • Districts have utilized taste-testing to identify healthier food choices that students will like • Some schools have promoted daily fitness activities in the classroom • School staff health promotion programs have been established

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*According to guidelines set forth by the National Association for Sport and Physical Education (NASPE), "a high quality physical education program includes the following components: opportunity to learn, meaningful content and appropriate instruction." As such, NASPE recommends instructional periods totaling 150 minutes and 225 minutes per week for elementary and middle/secondary school students, respectively. Instruction should encompass a variety of motor skills that enhance physical, mental, and social/emotional development of every child. Additionally, instruction should provide fitness education and assessment designed to help children improve and/or maintain their physical well-being. Appropriate instruction includes all students and offers maximum practice opportunities for class activities. For a more detailed description of NASPE's quality physical education program parameters, please visit: http://www.aahperd.org/NASPE/template.cfm?template=qualityPePrograms.html

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This document was supported by Grant/Cooperative Agreement Number U58/CCU722795-02 from the Centers for Disease Control and Prevention. Contents are solely the responsibility of the authors and do not necessarily represent the views of the Centers for Disease Control and Prevention.